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(54) Clothes drying, dewrinkling and ironing cabinet

(57) A clothes drying, dewrinkling and ironing cabinet which comprises a main enclosure (2) for housing clothes, access to said main enclosure (2) being by way of a front door (3), means (4) for drying and dewrinkling

the clothes in said enclosure (2) and control means for regulating said means (4), said cabinet also having an ironing board unit (6). This ironing board unit (6) is a folding one and is mounted on the inside of the door (3).

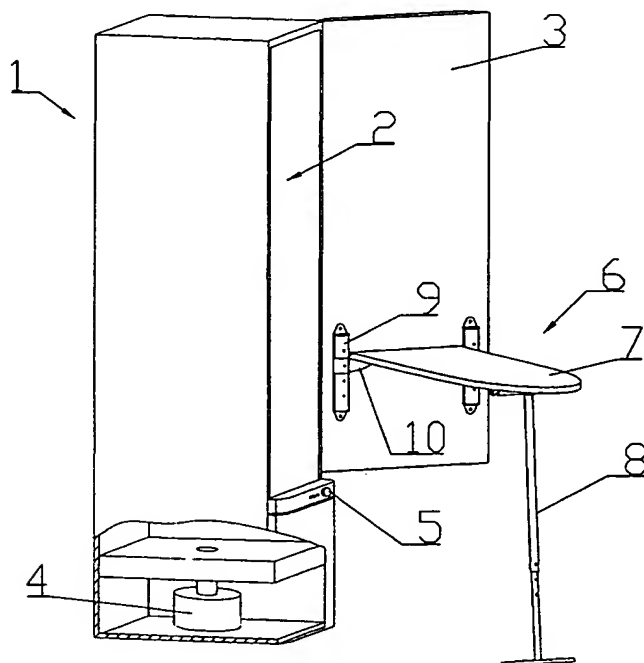


Fig. 1

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Description

TECHNICAL FIELD

[0001] The present invention relates to clothes drying, dewrinkling and ironing systems, and more specifically to clothes drying, dewrinkling and ironing cabinets intended mainly for domestic use, as well as to devices relating to conventional ironing.

PRIOR ART

[0002] It is a proven fact that one of the most disagreeable household chores is the process that initiates when clean clothes (garments, sheets, etc.) are taken out of the washing machine and finishes when they are stowed away in the respective wardrobe duly ironed. This process includes such operations as hanging out the washing taken out of the washing machine, bringing it in when dry, organizing the ironing thereof, etc.

[0003] There have been many attempts to expedite and simplify this process, but no household domestic appliance has been developed to date offering a complete and final solution.

[0004] The Spanish patent document from the same applicant with the Application No. P200000597 discloses a cabinet for clothes drying and dewrinkling, as well as a method for carrying out said drying and dewrinkling. Said invention facilitates the task of ironing to a considerable extent, as the level of dewrinkling that is achieved is such that subsequent use of the iron is only necessary for a small number of garments and for only very localised parts thereof.

[0005] The fact however that it is still necessary to resort to conventional ironing (even though it is only for a few garments) means that the user cannot dispense with the ironing board and cannot avoid the problems stemming from the need to use the iron (take the ironing board out of the place where it is stored, set it up in a suitable place, take it down and stow it away again after use, etc.).

[0006] There are a wide variety of ironing board units. US4995681 describes a folding ironing board which is kept in a purpose built cabinet for its storage.

[0007] US5329860 discloses an ironing board unit that can be mounted on a door. The invention includes an upright member with a hook that is hung from the frame of the chosen door, a transverse member fixed to said upright member, an ironing board hingedly attached to said transverse member, and a leg hingedly attached to said ironing board.

DISCLOSURE OF THE INVENTION

[0008] The main object of the invention is to provide an household electrical appliance that offers a complete, global and integrated solution to the domestic chore that commences when clean clothes are taken out

of the washing machine and concludes when they are duly ironed and stowed away.

[0009] Said household electrical appliance is a clothes drying, dewrinkling and ironing cabinet that comprises a main enclosure for housing clothes, with access to said main enclosure by way of a front door, means for drying and dewrinkling said clothes in the afore-mentioned enclosure, and further including an ironing board unit. This ironing board unit is a folding one and is mounted on the inside face of the cabinet door.

[0010] In this way, once the cabinet drying and dewrinkling program is concluded, the user has the possibility of opening said cabinet, setting up the ironing board unit housed on the inside face of the cabinet door and ironing those garments that are considered to need pressing.

[0011] This means that the user of this invention:

- Versus the user of an ironing board with a collapsible underframe, has the advantage of not having to take the ironing board unit out of the place where it is stored and set it up in a suitable place, nor of having to take it back to its place again once ironing is completed.
- Versus the user of a fold-down ironing board in respect of a fixed support, has the advantage of not having to take the clothes from the drying and dewrinkling cabinet to the place where the folding board unit is located.

[0012] Furthermore, since the invention makes it possible for the ironing board not to have to be kept somewhere else in the house (it is inside the drying and dewrinkling cabinet), it also affords a saving in time and effort as well as saving space.

[0013] Apart from the ironing board unit, the rest of the equipment needed for ironing, such as the actual iron itself, will also be kept in the drying and dewrinkling cabinet.

[0014] Another object of the invention is to provide the cabinet covered by the invention with a fold-down ironing board that improves upon some of the main features of the prior art ironing boards.

[0015] Said fold-down ironing board unit comprises a board, a fixed leg hingedly attached to the under side of said board and anchoring means attached to the inside of the cabinet door. When folded down, the board rests on the leg and on the cabinet door anchoring means, so that a position of high stability is achieved.

[0016] Said anchoring means include two elongated vertical supports and two bearing stops attached to said supports. At one end the board has a shaft and the supports have longitudinal guide slots wherein the ends of said shaft are housed.

[0017] The main advantages of the invention are as follows:

- The stops fixed to the vertical supports act as bearing points for the board when the ironing board unit is folded down, while the same stops also prevent the board from swinging down when it is stowed away. This saves having to use additional board anchoring means.
- When the ironing board unit is stowed away, the actual board cannot be lowered unless the user raises it above said stops in order to fold it down. This prevents the board from accidentally swinging down, which endows the unit with great safety.
- The solution is sturdy but at the same time simple, as, when the ironing board unit is folded down, the board itself is secured on both sides, which stops it from lurching, while the stops serve as bearing points, which makes the ironing board highly stable.
- Since the stops may be positioned at different heights on the vertical supports, the ironing board unit is adjustable for height with the special feature of it not being necessary for the user to adjust it every time it is used. Once these stops are fixed at the desired height, the user then has the height of the board set for subsequent occasions.

DESCRIPTION OF THE DRAWINGS

[0018]

FIG. 1 is a perspective view of an embodiment of the cabinet of the invention with the ironing board folded down.

FIG. 2 is a perspective view of the embodiment of FIG. 1 with the ironing board folded away.

FIG. 3 is a front view of the inside of the cabinet door of the embodiment of FIG. 1, with the ironing board folded away.

FIG. 4 is a cross section according to the IV-IV section line of FIG. 3.

FIG. 5 is a cross section according to the V-V section line of FIG. 3.

DETAILED DISCLOSURE OF AN EMBODIMENT OF THE INVENTION

[0019] With reference to FIG. 1, cabinet 1 of the invention comprises:

- a main enclosure 2 for housing clothes.
- a front door 3 offering access to said main enclosure 2.
- means 4 for drying and dewrinkling said clothes in the enclosure 2.
- control means 5 for regulating said control means 4,
- a fold-down ironing board unit 6 placed on the inner

side of the door 3.

[0020] Cabinet 1 will also include the necessary equipment (not shown in the figures) for carrying out conventional ironing, such as the actual iron itself.

[0021] The ironing board unit 6, which is shown in its working position in FIG. 1, comprises a board 7 and a fixed leg 8, which is hingedly attached to the under side of said board 7. As may be seen in the afore-mentioned FIG. 1, once the door 3 is open and the ironing board unit 6 is folded down, said board 7 rests on the leg 8 and on the anchoring means attached to the inside of said door 3.

[0022] The anchoring means include two elongated vertical supports 9 and 9' attached to the inside of the door 3 and two stops 10 and 10' attached to said support 9 and 9'. The stops 10 and 10' act as bearing points for the board 7 when the ironing board unit 6 is folded down.

[0023] As shown in FIG. 2, said stops 10 and 10' act as anchoring means for the board 7 from swinging down when the ironing board unit 6 is folded away.

[0024] With reference to FIG. 3, the board 7 has a shaft at one end and the supports 9 and 9' have longitudinal guide slots 11 and 11' facing each other. The shaft 14 of the board 7 is housed in said guide slots 11 and 11'. The leg 8, which is hingedly attached to the board 7 and moves according to the axis 8a, is secured to the board 7 when the ironing board unit 6 is folded away by means of a gripping device 7a with which said board 7 is provided.

[0025] Stops 10 and 10' each have:

- a main body (12 and 12') encircling the respective support (9 and 9') so that said stops 10 and 10' can slide longitudinally along said supports 9 and 9' in order to be able to regulate the height at which it is desired to set said stops 10 and 10';
- a shoulder (13 and 13') attached to said main body (12 and 12'), the shoulders 13 and 13' of both stops 10 and 10' being opposite each other; and
- fastening means (not shown in FIG. 3) to fix said stops 10 and 10' at the desired height setting.

[0026] Obviously, the length of the leg 8 is adjustable so that it can be made to match the height at which the stops 10 and 10' are placed.

[0027] For fixing stops 10 and 10', supports 9 and 9' have a series of longitudinally aligned holes. With reference to FIG. 4, the stop 10 fixing means (just as the stop 10' fixing means) include a pin 15 housed in the body 12 which is inserted at the user's discretion in the hole at the height at which it is desired to fit stop 10.

[0028] In this embodiment a spring 16 with a washer 17 is added to the pin 15 so that said pin 15 slips automatically into the hole which it is facing if the user releases it. The pin 15 has a head 18 which makes it easier for the user to take hold of said pin 15.

[0029] With reference to FIG. 5, in the embodiment

described the shaft 14 is an integral part of the board 7.

(15,15') housed in the body (12,12'), which is inserted in the hole at the height at which it is desired to set the stops (10,10').

Claims

1. A clothes drying, dewrinkling and ironing cabinet which comprises a main enclosure (2) for housing clothes, access to said main enclosure (2) being by way of a front door (3), means (4) for drying and dewrinkling the clothes in said enclosure (2) and control means (5) for regulating said means (4), **characterised in that** it also includes a folding ironing board unit (6) mounted on the inside of the door (3) so as to make it possible for said cabinet (1) to include all the equipment needed for the drying, dewrinkling and ironing process to be carried out.
2. A cabinet according to claim 1, **characterised in that** the ironing board unit (6) comprises a board (7), a fixed leg (8) hingedly attached to the under side of said board (7), and anchoring means (9,9', 10,10') attached to the inside of said door (3), said board (7) being supported, once the door (3) is open and the ironing board unit (6) folded down, on the leg (8) and on the anchoring means (9,9',10,10').
3. A cabinet according to claim 2, **characterised in that** the anchoring means (9,9',10,10') include elongated vertical supports (9,9') attached to the inside of the door (3) and two stops (10,10') attached to said supports (9,9'), while at one end the board (7) has a shaft (14), the supports (9,9') having longitudinal guide slots facing each other, the ends of the shaft (14) of the board (7) being housed in said guide slots (11, 11') and the stops (10,10') acting as a support for the board (7) when the ironing board unit (6) is folded down and as holding means to stop the board (7) from swinging down when the ironing board unit (6) is stowed away.
4. A cabinet according to claim 3, **characterised in that** each stop (10, 10') has:
 - a main body (12,12') encircling its respective support (9,9') so that said stops (10,10') can slide longitudinally along said supports (9,9') in order to be able to regulate the height at which it is desired to set said stops (10,10');
 - a shoulder (13,13') linked to said body (12,12'), the shoulders (13,13') of both stops (10,10') being opposite each other; and
 - fastening means for fixing said stops (10,10') at the height at which it is desired to set them, the length of the leg (8) also being adjustable.
5. A cabinet according to claim 4, **characterised in that** the supports (9,9') have a set of longitudinally aligned holes and the fastening means include a pin

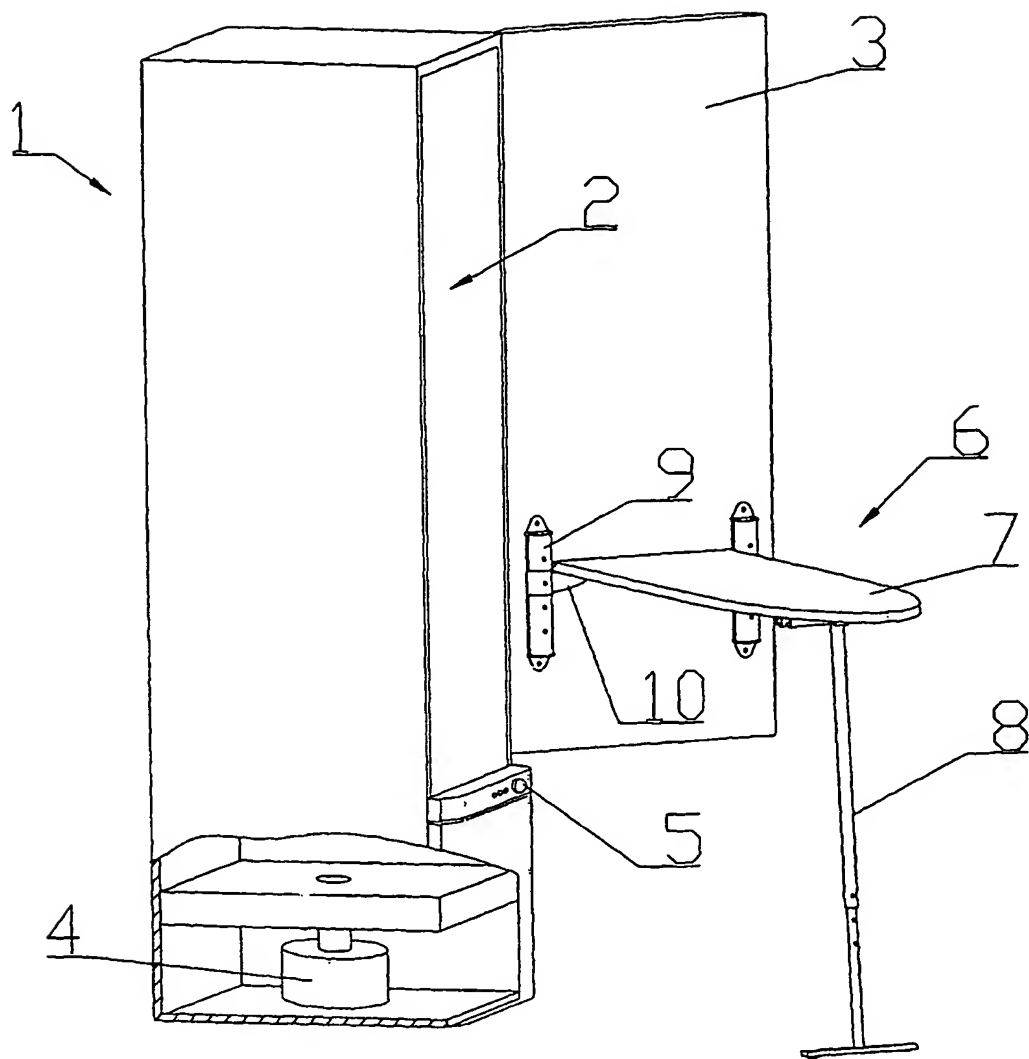


Fig. 1

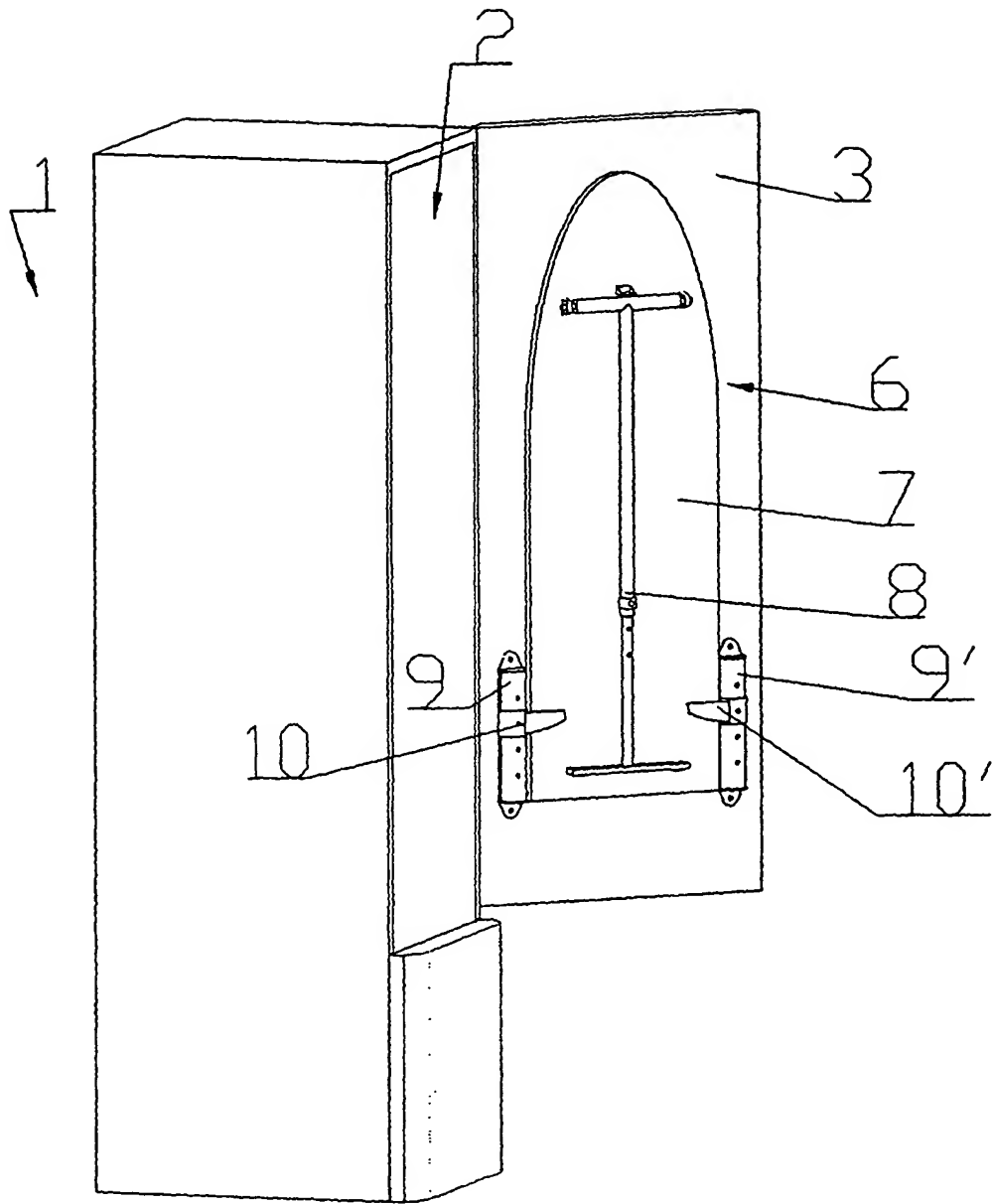


Fig. 2

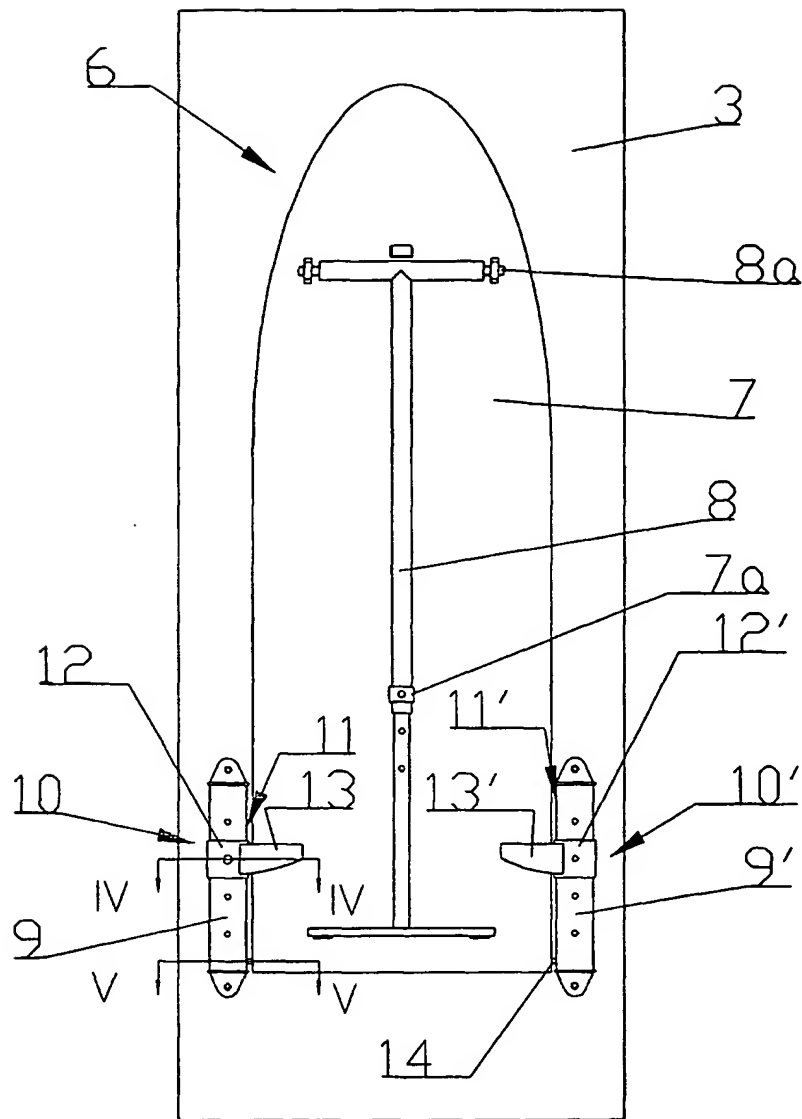


Fig. 3

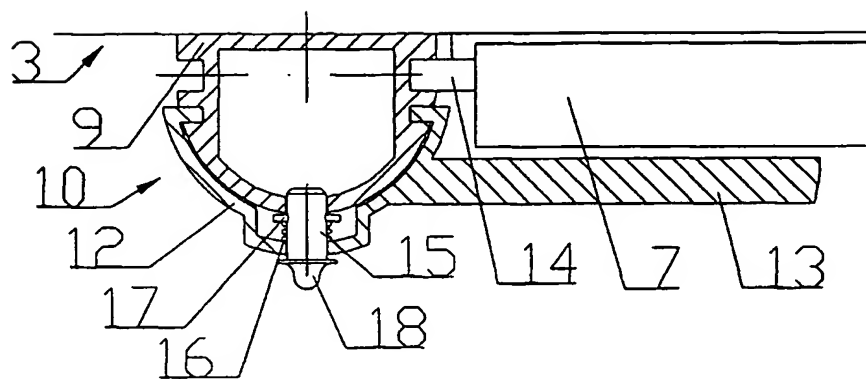


Fig. 4

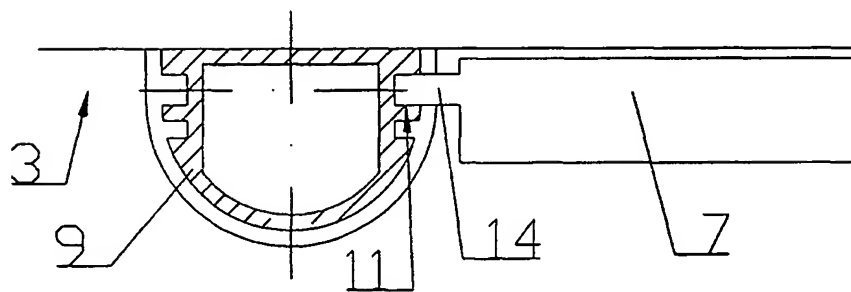


Fig. 5

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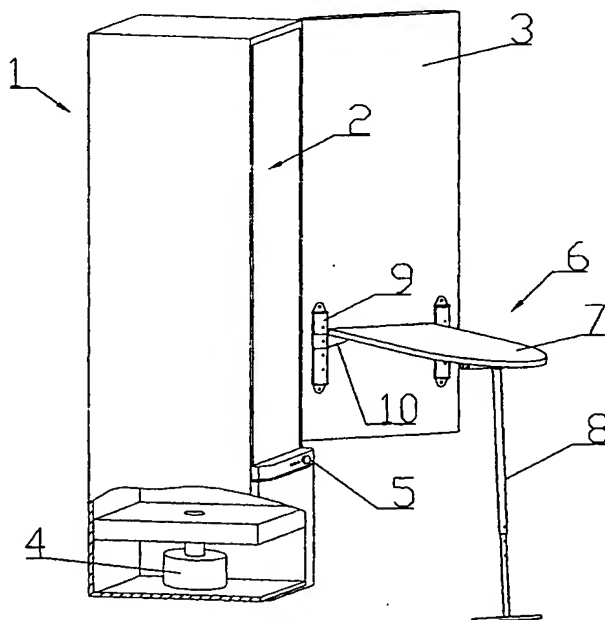


Fig. 1

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EUROPEAN SEARCH REPORT

Application Number
EP 01 10 3748

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
Y	US 3 805 561 A (BULLOCK N) 23 April 1974 (1974-04-23) * the whole document *	1,2	A47B77/10 D06F81/06 D06F58/10
Y	US 5 329 860 A (MATTESKY HENRY) 19 July 1994 (1994-07-19) * the whole document *	1,2	
A	GB 976 539 A (DAVID JACKSON ENGINEERING LTD) 25 November 1964 (1964-11-25) * the whole document *	1	
A	US 1 858 765 A (CRAMER OTTO P) 17 May 1932 (1932-05-17) * the whole document *	1	
A	US 5 815 961 A (ESTES KURT A ET AL) 6 October 1998 (1998-10-06)		
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			A47B D06F
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 7 June 2002	Examiner Debard, M
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ON EUROPEAN PATENT APPLICATION NO.**

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Patent document cited in search report		Publication date	Patent family member(s)		Publication date
US 3805561	A	23-04-1974	US	3869815 A	11-03-1975
US 5329860	A	19-07-1994	AU	1530592 A	02-11-1992
			WO	9217095 A1	15-10-1992
GB 976539	A	25-11-1964	NONE		
US 1858765	A	17-05-1932	NONE		
US 5815961	A	06-10-1998	CN	1170061 A , B	14-01-1998
			EP	0816552 A2	07-01-1998
			JP	10080331 A	31-03-1998

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